Final Report

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Assignment of Work

- **Account** / **Purchases**: Chang Cao

- **Products** / **Cart**: Yi Gao

- **Inventory** / **Order Fulfillment**: Yifei Ke

- **Feedback** / **Messaging**: Zhekun Wu
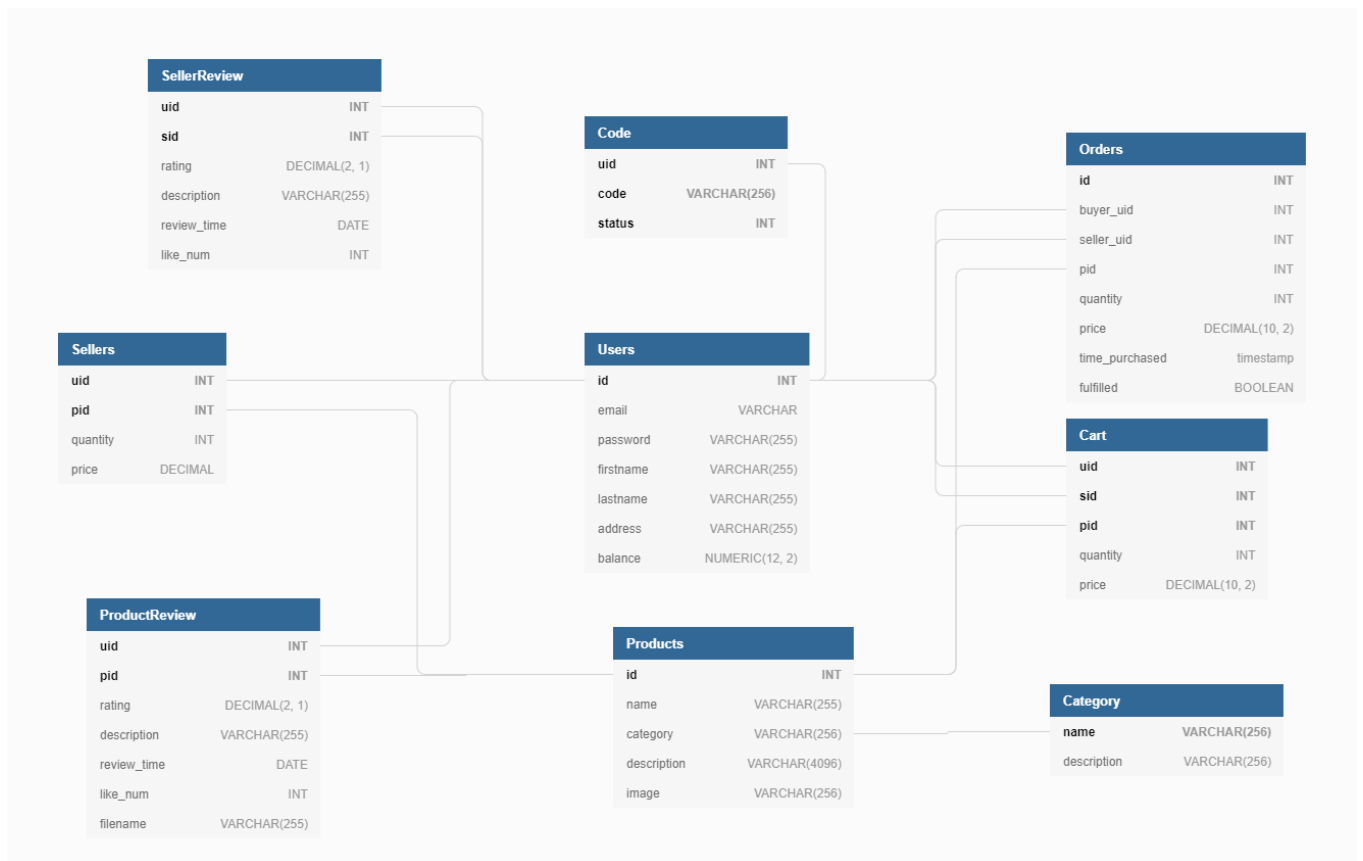
Database Schema

Figure 1: Database Schema

Explanation and Analysis

- Our database includes nine tables. The primary key of each table is shown in bold. Among them, Users, Orders, and Products are the most important ones.

- The **Users** table contains basic information such as user information and balance. The **Sellers** table is created to describe different seller information, and uses user id and product id as foreign keys.

- The **Products** table contains basic information of products, and the **Category** table contains six available categories and corresponding descriptions.

- The **Orders** table contains information such as buyer, seller, product, price, quantity, time, and status. It uses user id and product id as foreign keys.

- The **Cart** table contains all the required information in the cart of each user, and uses user id and product id as foreign keys. The **Code** table contains the coupon code information, and uses user id as a foreign key.

  - In the Code table, the status is marked '0' if the code is applied in the current cart, and is marked '1' if the code is used in a previous cart.

- The **ProductReview** table contains information such as the buyer id, product id in order to build the primary key, use user id and product id as foreign keys, and other information such as review time, rating, description and the number of likes.

- The **SellerReview** table contains information such as the buyer id, seller id in order to build the primary key, use user id as foreign keys, and other information such as review time, rating and description.

- We also created a view named **ProductSummary** to combine seller information, such as average prices and seller numbers, with product information.

  - This view is used to show sufficient information in the product summary page.
  - Due to the limitation of our drawing tools, this view is not included in the figure above. The codes are shown in *db/create.sql*.

- Most of the databases are randomly generated using `https://www.mockaroo.com/` and `https://picsum.photos/`. In addition, most of them contain approximately 1000 data.

Features

Account / Purchases

Basic requirements

Description	Status
Register and log in	Fully functional
User information update	Fully functional
Balance management	Fully functional
Purchase history list	Fully functional
Purchase history search and filter	Fully functional
Public view for users	Fully functional

Table 1: Basic Requirements for Account/Purchases

Additional features

- Added email system to the Mini-Amazon website. Once a new user registers an account with an email address successfully, a confirmation email containing a welcome message will be sent to this address automatically.

Products / Cart

Basic requirements

Description	Status
Product Information	Fully functional
Browse and search/filter products	Fully functional
Detailed product page	Fully functional
Detailed cart page	Fully functional
Create and edit new products	Fully functional

Table 2: Basic Requirements for Products/Cart

Additional features

- Made one more enhancement to sorting. Users can sort the products by total quantities. This feature is fully functional.

- Implemented promotional coupon codes for the entire cart. Users can apply promotional coupon codes, as well as remove the code applied before. Only one code is allowed for each cart submission. Users can get a 10% discount using the codes below. This feature is fully functional.

    - Code list: DUKE, BLUEDEVIL, CHANG, YI, YIFEI and ZHEKUN.

Inventory / Order Fulfillment

Basic requirements

Description	Status
Detailed inventory Page	Fully functional
Edit/Remove products and update quantity	Fully functional
Browse/search history of orders	Fully functional
Order fulfillment and Order summary	Fully functional
Detailed order page	Fully functional
Visualization/analytics for inventory and order	Fully functional

Table 3: Basic Requirements for Inventory/Order

Additional features

- Add analytics about buyers such as ratings, number of messages.

Feedback / Messaging

Basic requirements

Description	Status
Review for products	Fully functional
Review for Sellers	Fully functional
View and update reviews	Fully functional
Average ratings	Fully functional
Upvote reviews	Fully functional

Table 4: Basic Requirements for Feedback/Messaging

Additional features

- Users can upload or update image for any product review. Each product review can only add one image. In the detailed page of every product, users can view the product reviews that come with images, these product reviews are sorted by the number of likes. This feature is fully implemented and well-functional.

Putting them together

Basic requirements

1. We have merged our final results into the main branch. The weekly progress can be seen from branches in
   `https://gitlab.oit.duke.edu/cc749/mini-amazon-skeleton`

2. Everyone can log in using our root account to explore all the features mentioned above.

   - Email: cc749@duke.edu
   - Password: 123456

Additional features

- Combined functions from **Products** and **Sellers** to add or edit products when sellers adding products in their inventory.

- Combined functions from **Carts** and **Orders** to update Orders table when buyers submitting their carts as orders.

  - Note: The balance of both sellers and buyers remains unchanged when buyers submitting carts.

- Combined functions from **Users** and **Orders** to update both sellers' balance as well as buyers' balance when sellers fulfilling any orders.

- Combined functions from **Sellers** and **Orders** to decrease inventory quantities when sellers fulfilling any orders.